What is claimed is:

1. A method of inhibiting mycobacterial growth in a patient comprising administering an amount of a composition comprising an inhibitor of Rel_{Mtb}.

2. The method of claim 1, wherein said inhibitor inhibits the hydrolytic activity of Rel_{Mtb}.

3. The method of claim 1, wherein said inhibitor inhibits the synthetic activity of Rel_{Mtb}.

4. The method of claim 1 wherein said mycobacteria is *M. tuberculosis*.

5. The method of claim 1 wherein said inhibitor of Rel_{Mtb} is coadministered with at least one antibiotic.

6. The method of claim 5 wherein said at least one additional antibiotic is isoniazid, rifampin, streptomycin, pyrazinamide or ethambutol.

7. The method of claim 1 wherein said amount is an effective amount to ameliorate a mycobacterial infection in said patient.

8. The method of claim 1 wherein the inhibitor is an antisense oligonucleotide comprising at least 80% sequence homology to the complement of a nucleic acid molecule encoding a *M. tuberculosis* Rel_{Mtb} polypeptide (SEQ ID NO:7, 8, 9, 10, 11, 12, or 13), wherein said antisense oligonucleotide specifically hybridizes to the nucleic acid molecule and inhibits *M. tuberculosis* Rel_{Mtb} mRNA levels by at least 50% in *M. tuberculosis*.

9. A recombinant vaccine comprising a nucleotide sequence that encodes *M. tuberculosis* immunogen operably linked to a regulatory elements, wherein said immunogen comprises Rel_{Mtb} or a fragment thereof.

10. The recombinant vaccine of claim 9 wherein said immunogen comprises SEQ ID NOs, 14, 15, 16, 17, 18, 19, or 20.

11. The recombinant vaccine of claim 9 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

12. A method of inducing an immune response in a patient against a pathogen comprising administering to said patient a recombinant vaccine of claim 9.

13. A method of inducing an immune response in an animal comprising administering an immunogenic composition comprising an attenuated *M. tuberculosis*.

14. The method of claim 13 wherein said attenuated *M. tuberculosis* comprises an inactivated Rel_{Mtb} gene.

15. The method of claim 13 wherein said attenuated mycobacteria tuberculosis comprises an mutated Rel_{Mtb} protein , wherein said mutated Rel_{Mtb} protein comprises a fragment of SEQ ID NO:

16. The method of claim 15 wherein said fragment has a sequence of SEQ ID NOs: 8, 9, 10, 11, 12, or 13.

17. The method of claim 15 wherein said mutated Rel_{Mtb} protein has diminished synthetic activity.

18. The method of claim 17 wherein said diminished synthetic activity is reduced by at least 50%.

19. The method of claim 15 wherein said mutated Rel_{Mtb} protein has diminished hydrolytic activity.

20. The method of claim 19 wherein said diminished hydrolytic activity is reduced by at least 50%.

21. The method of claim 15 wherein said mutated Rel_{Mtb} protein has diminished hydrolytic and synthetic activity.

22. The method of claim 21 wherein said diminished hydrolytic and synthetic activity is reduced by at least 50%.

23. The method of claim 15 wherein said mutated Rel_{Mtb} protein has activated hydrolytic or activated synthetic activity, or activated hydrolytic and activated synthetic activity.

24. The method of claim 13 wherein said animal is a mouse, monkey, or human.

25. A method of inducing an immune response in a patient comprising administering to said patient an immunogenic composition comprising a polypeptide, said polypeptide comprising a Rel_{Mtb} protein or fragment thereof.

26. The method of claim 25 wherein said polypeptide comprises one or more of sequences SEQ ID NOs: 7, 8, 9, 10, 11, 12, or 13.

27. The method of claim 25 wherein said polypeptide has diminished synthesis activity.

28. The method of claim 25 wherein said polypeptide has diminished hydrolysis activity.

29. The method of claim 25 wherein said polypeptide has synthetic activity.

30. The method of claim 25 wherein said polypeptide has hydrolytic activity.

31. The method of claim 25 wherein said polypeptide has hydrolytic and synthesis activity.

32. The method of claim C wherein said polypeptide has diminished hydrolytic or synthetic activity.

33. A method of modulating transcription in *M. tuberculosis* comprising administering to said *M. tuberculosis* a composition comprising a modulator of Rel_{Mtb}.

34. The method of claim 33 wherein said modulator is an antibody, peptide, polypeptide, small molecular weight compound, antisense compound, or RNAi compound.

35. The method of claim 33 wherein said modulator inhibits the synthetic activity of Rel_{Mtb}.

36. The method of claim 33 wherein said modulator inhibits the hydrolytic activity of Rel_{Mtb}.

37. The method of claim 33 wherein said modulator inhibits the hydrolytic and the synthetic activity of Rel_{Mtb}.

38. The method of claim 33 wherein said modulator activates hydrolytic activity, synthetic activity, or both of the Rel_{Mtb} protein.

39. An isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide comprising a fragment of a Rel_{Mtb} protein.

40. The isolated polynucleotide of claim 39 wherein said fragment has hydrolytic activity.

41. The isolated polynucleotide of claim 39 wherein said fragment has synthetic activity.

42. The isolated polynucleotide of claim 39 wherein said fragment has synthetic and hydrolytic activity.

43. The isolated polynucleotide of claim 39 wherein said fragment has hydrolytic and/or synthetic activity, said hydrolytic and/or synthetic activity is not increased or decreased by the Rel_{Mtb} activating complex (RAC)

44. The isolated polynucleotide of claim 39 wherein said fragment has diminished synthetic activity, hydrolytic activity, or synthetic and hydrolytic activity.

45. The isolated polynucleotide of claim 39 wherein said nucleotide sequence comprises SEQ ID NOs: 15, 16, 17, 18, 19, or 20.

46. The isolated polynucleotide of claim 39 wherein said polypeptide comprises SEQ ID NOs 9, 10, 11, 12, 13, or 14.

47. An expression vector comprising a nucleic acid molecule of any one of claims 39.

48. The expression vector of claim 47 wherein said vector is a plasmid.

49. The expression vector of claim 47 wherein said vector is a viral particle.

50. The expression vector of claim 47wherein said vector is selected from the group consisting of adenoviruses, baculoviruses, parvoviruses, herpesviruses, poxviruses, adeno-associated viruses, Semliki Forest viruses, vaccinia viruses, and retroviruses.

51. The expression vector of claim 47 wherein said nucleic acid molecule is operably connected to a promoter selected from the group consisting of simian virus 40, mouse mammary

tumor virus, long terminal repeat of human immunodeficiency virus, maloney virus, cytomegalovirus immediate early promoter, Epstein Barr virus, rous sarcoma virus, human actin, human myosin, human hemoglobin, human muscle creatine kinase, and human metallothionein.

52. A host cell transformed with an expression vector of claim 47.

53. The transformed host cell of claim 52 wherein said cell is a bacterial cell.

54. The transformed host cell of claim 53 wherein said bacterial cell is a mycobacterial cell.

55. The transformed host cell of claim 54 wherein said mycobacterial cell is *M. tuberculosis* or *M. smegmatis*.

56. The transformed host cell of claim 53 wherein said bacterial cell is E. coli.

57. The transformed host cell of claim 52 wherein said cell is yeast.

58. The transformed host cell of claim 57 wherein said yeast is S. cerevisiae.

59. The transformed host cell of claim 52 wherein said cell is an insect cell.

60. The transformed host cell of claim 59 wherein said insect cell is S. frugiperda.

61. The transformed host cell of claim 52 wherein said cell is a mammalian cell.

62. The transformed host cell of claim 61 wherein mammalian cell is selected from the group consisting of chinese hamster ovary cells, HeLa cells, African green monkey kidney cells, human HEK-293 cells, and murine 3T3 fibroblasts.

63. An antisense oligonucleotide comprising at least 80% sequence homology to the complement of a nucleic acid molecule encoding a *M. tuberculosis* Rel_{Mtb} polypeptide (SEQ ID NO:7, 8, 9, 10, 11, 12, or 13), wherein said antisense oligonucleotide specifically hybridizes to the nucleic acid molecule and inhibits *M. tuberculosis* Rel_{Mtb} mRNA levels by at least 50% in *M. tuberculosis*.

64. The antisense oligonucleotide of claim 63 of wherein said mRNA levels are reduced by at least 75% in *M. tuberculosis*.

65. The antisense oligonucleotide of claim 63 wherein said mRNA levels are reduced by at least 90% in *M. tuberculosis*.

66. The antisense oligonucleotide of claim 63 wherein the antisense oligonucleotide comprises at least 95% sequence homology to the complement of a nucleic acid molecule encoding *M. tuberculosis* Rel_{Mtb} polypeptide (SEQ ID NO: 7, 8, 9, 10, 11, 12, or 13).

67. The antisense oligonucleotide of claim 63, wherein said antisense oligonucleotide is hybridizes within a region of SEQ ID NO:7.

68. The antisense oligonucleotide of claim 67, wherein said region is the 5'-UTR, 3'-UTR, or coding region.

69. The antisense oligonucleotide of claim 67 wherein said region is has a sequence of SEQ ID NO:14, 15, 16, 17, 18, or 19.

70. The antisense oligonucleotide of claim 63, wherein said antisense oligonucleotide is about 10 to about 30 nucleobases in length.

71. A composition comprising a nucleic acid molecule of any one of claims 63 and a pharmaceutically acceptable carrier or diluent.

72. A composition comprising a recombinant expression vector of claim 47 and a pharmaceutically acceptable carrier or diluent.

73. A method of producing a polypeptide that comprises a fragment of SEQ ID NO:7, said method comprising the steps of:

a) introducing a recombinant expression vector of claim F into a compatible host cell;

b) growing said host cell under conditions for expression of said polypeptide; and

c) recovering said polypeptide.

74. The method of claim 73 wherein said host cell is lysed and said polypeptide is recovered from the lysate of said host cell.

75. An isolated polypeptide fragment of Rel_{Mtb} encoded by a nucleic acid molecule comprising an amino acid sequence with selected from the group consisting of SEQ ID NOs 14, 15, 16, 17, 18, and 19.

76. The polypeptide of claim 75 wherein said polypeptide comprises an amino acid sequence at least 80% homologous to SEQ ID NO:8, 9, 10, 11, 12, or 13.

77. The polypeptide of claim L wherein said polypeptide comprises a sequence with at least 90% sequence homology to SEQ ID NO: 8, 9, 10, 11, 12, or 13.

78. The polypeptide of claim L wherein said polypeptide comprises an amino acid sequence of SEQ ID NO: 8, 9, 10, 11, 12, or 13.

79. An isolated polypeptide fragment of Rel_{Mtb}, wherein said fragment has hydrolytic and/or synthetic activity, said hydrolytic and/or synthetic activity is not increased or decreased by more than 10% by the Rel_{Mtb} activating complex (RAC).

80. The isolated polypeptide fragment of claim 79 wherein said fragment comprises an amino acid sequence of SEQ ID NO: 8, 9, 10, 11, 12, or 13.

81. A composition comprising a polypeptide of claim 79 and an acceptable carrier or diluent.

82. An isolated antibody which binds to an epitope on a polypeptide of claim 79.

83. The antibody of claim 82 wherein said antibody is a monoclonal antibody.

84. A composition comprising an antibody of claim 82 and an acceptable carrier or diluent.

85. A method of identifying modulators of Rel_{Mtb} activity comprising:

a) contacting Rel_{Mtb} with a potential modulator; and

b) measuring the activity of Rel_{Mtb}

wherein if an activity of Rel_{Mtb} is inhibited then the modulator is an inhibitor of Rel_{Mtb} activity, and if an activity of Rel_{Mtb} is increased the modulator is an activator of Rel_{Mtb} activity.

86. The method of claim 85wherein said activity is hydrolytic activity.

87. The method of claim 85wherein said activity is synthetic activity.

88. The method of claim 85wherein said activity is transcriptional activity.

89. A method of protecting a patient from a *M. tuberculosis* infection comprising administering to said patient an amount of a composition comprising a Rel_{Mtb} modulator effective to protect the animal from *M. tuberculosis* infection.

90. A method of modulating growth of a pathogen comprising administering to said pathogen an amount of a composition comprising a modulator effective to inhibit growth of said pathogen.

91. The method of claim 90 wherein said modulator is a Rel_{Mtb} modulator.

92. The method of claim 91wherein said Rel_{Mtb} modulator is a Rel_{Mtb} inhibitor.

93. The method of claim 90 wherein said amount of a composition comprising a Rel_{Mtb} modulator effective to protect the animal from *M. tuberculosis* infection inhibits the growth of *M. tuberculosis* by at least 50% in an *in vitro assay*.

94. The method of 93 wherein said *in vitro* assay measures oxygen consumption, or carbon consumption.

95. A method of inhibiting dormancy in *M.* tuberculosis comprising administering to said *M. tuberculosis* a composition comprising a modulator of Rel_{Mtb}.

96. The method of claim 95wherein said modulator is an antibody, peptide, polypeptide, small molecular weight compound, antisense compound, or RNAi compound.

97. The method of claim 95wherein said modulator inhibits the synthetic activity of Rel_{Mtb}.

98. The method of claim 95wherein said modulator inhibits the hydrolytic activity of Rel_{Mtb}.

99. The method of claim 95wherein said modulator inhibits the hydrolytic and the synthetic activity of Rel_{Mtb}.

100. The method of claim 95wherein said modulator activates hydrolytic activity, synthetic activity, or both of the Rel_{Mtb} protein.

101. The method of claim 95wherein said *M. tuberculosis* is present within a patient.

102. An attenuated *M. tuberculosis* comprising an inactivated Rel_{Mtb} gene, wherein said inactivated Rel_{Mtb} gene encodes for a Rel_{Mtb} protein with diminished synthetic activity, hydrolytic activity, or both.

103. The attenuated *M. tuberculosis* of claim 102 wherein said inactivated Rel_{Mtb} gene encodes for a polypeptide having an amino acid sequence of SEQ ID NOs 8, 9, 10, 11, 12, or 13.

104. The attenuated *M. tuberculosis* of claim 102 wherein said inactivated Rel_{Mtb} gene has a nucleotide sequence of SEQ ID NOs 14, 15, 16, 17, 18, or 19.